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EXAMINER

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ART UNIT	PAPER NUMBER
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1764

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 15

Application Number: 09/135,804
Filing Date: 8/18/98
Appellant(s): Gregory M. Marocco

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Richard C. Litman
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 11/20/00.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

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(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-30 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

3,885,977	Lachman et al	5-1975
4,032,310	Ignoffo	6-1977

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4,364,761	Berg et al	12-1982
4,541,240	Munro	9-1985
5,016,438	Harris	5-1991
5,183,976	Plemons, Jr.	2-1993
5,355,973	Wagner et al	10-1994
JP 64-12017	----	1-1989

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(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Specification

1. The disclosure is objected to because of the following informalities:

On page 21, line 22 --or sound attenuating plenum-- should be inserted before "44" (note page 19, line 26 and page 21, lines 18-19, 22).

Note that applicant should use the same terminology throughout the specification and claims to avoid confusion.

Appropriate correction is required.

2. The amendment filed 2/15/00 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: On page 11, line 14 the newly added sentences after "harmless products" is nowhere disclosed in the original specification. On page 17, line 3 the insertion of "(e.g., 0.010" maximum)" is nowhere disclosed in the original specification.

Applicant is required to cancel the new matter in the reply to this Office action.

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

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Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7, 11-20, 27 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 7, it is unclear as to what is intended by "width". See claims 17, 27 likewise.

In claim 11, line 32 it is unclear as to what is intended by "axially parallel to one another" and where such is shown in the drawings.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2, 4, 6, 9, 21, 24-26, 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Wagner et al (5,355,973).

Wagner et al disclose an apparatus for modifying an exhaust stream comprising:

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a canister 11 including an inlet end 17, a forward portion, a rearward portion and an outlet end 18, a forward inner diameter and a rearward inner diameter;

at least one catalytic converter element 50 installed within the forward portion of the canister 11, said catalytic converter element 50 having an outer diameter and including a substrate 51 having a plurality of passages defined by plurality of walls;

a resonator element 65 installed within the rearward portion of the canister 11, said resonator element 65 having a hollow core, a forward end, a rearward end, an outer diameter, and a plurality of sound attenuating perforations 84 formed radially therethrough;

said outer diameter of the resonator element 65 being smaller than the rearward inner diameter of the canister 11 and defining a sound attenuating plenum 85 therebetween; and

said inlet end 17 of the canister 11, said plurality of passages of the catalytic converter element 50, said hollow core of said resonator element 65 and said outlet end 18 of said canister 11 all being axially aligned with one another.

Note that the catalytic converter element 50 of Wagner et al is in form of a monolithic converter and its passages are parallel to the longitudinal axis of the canister.

With respect to claim 2, the canister 11 of Wagner et al is a tubular shell.

With respect to claims 4, and 24, refer to the plates 66 and 77 in Wagner et al.

With respect to claims 6, and 26, refer to the catalytic converter element 50 (Fig. 3) of Wagner et al.

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With respect to claims 9, and 29, Wagner et al disclose that the catalytic converter element 50 is made of ceramic material (col. 9, lines 5-15).

With respect to claim 21, Wagner et al disclose that the rearward end of the resonator element 65 extends outwardly beyond said outlet end 18 of the canister 11.

With respect to claim 25, the plate 66 of Wagner et al does not have passages therethrough.

Instant claims 1-2, 4, 6, 9, 21, 24-26, 29 structurally read on the apparatus of Wagner et al.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

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10. The art area applicable to the instant invention is that of catalytic converter and muffler.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

11. Claims 3, 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of Munro (4,541,240).

With respect to claims 3 and 23, the modified apparatus of is substantially the same as that instantly claimed, but is silent as to the specific material for the canister and the resonator element.

However, Munro discloses the conventionality of providing a canister and a resonator element made of steel. Munro also discloses that the sound absorbent material is disposed in the sound attenuating plenum between the canister and the resonator element.

It would have been obvious to one having ordinary skill in the art to select an appropriate material for the canister and the resonator element, such as steel as taught by Munro in the

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apparatus of Wagner et al on the basis of its suitability for the intended use as a matter of obvious design choice and since use of such is conventional in the art and no cause for patentability here.

With respect to claim 22, it would have been obvious to one having ordinary skill in the art to provide sound absorbent material in the sound attenuating plenum between the canister and the resonator element as taught by Munro in the apparatus of Wagner et al to absorb sound.

12. Claims 5, 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of Plemons, Jr. (5,183,976).

Plemons, Jr. discloses provision of a forward plate 22 with a solid periphery devoid of passages and a rearward plate 24 with a plurality of passages 34.

It would have been obvious to one having ordinary skill in the art to construct the forward and rearward plates as taught by Plemons, Jr. in the apparatus of Wagner et al so as to allow the exhaust gas exiting the resonator plenum, thereby to control the back pressure thereof..

13. Claims 7-8, 27-28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of either Berg et al (4,364,761) or Lachman et al (3,885,977).

The apparatus of Wagner et al is substantially the same as that of the instant claims, but is silent as to the specific width of the passages of the catalytic converter element.

Berg et al and Lachman et al disclose provision of a ceramic substrate having passages wherein the width of each passage is greater than 0.040 inch (see col. 3, lines 4-6 in Berg et al and col. 16, line 7 in Lachman et al).

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It would have been obvious to one having ordinary skill in the art to select the specific width as taught by Berg et al or Lachman et al in the apparatus of Wagner et al for reducing restriction to the exhaust gas flow and since such is conventional in the art and no cause for patentability here.

With respect to claims 8 and 28, the passages of the substrate in Berg et al or Lachman et al appear to have a large width which falls within the instant range and the walls of the substrate appear to be thin.

14. Claims 10, 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of Ignoffo (4,032,310) or Harris (5,016,438).

Ignoffo and Harris show the conventionality of providing more than one catalytic converter elements.

It would have been obvious to one having ordinary skill in the art to provide more than one catalytic converter element in the apparatus of Wagner et al as taught by Ignoffo and Harris for further purifying exhaust gas.

15. Claims 11-12, 14, 16, 19-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of JP 64-12017 and Harris (5,016,438).

The apparatus of Wagner et al is substantially the same as that of the instant claims, but fails to disclose whether the inlet and outlet ends may be provided in pair and whether more than one resonator element may be provided.

However, JP 64-12017 discloses provision of inlet and outlet ends provided in pair.

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Harris discloses the conventionality of providing more than one resonator elements 80.

It would have been obvious to one having ordinary skill in the art to alternatively provide more one inlet and outlet ends, as taught by JP 64-12017 and provide more than one resonator element as taught by Harris in the apparatus of Wagner et al on the basis of its suitability for the intended use as a matter of obvious design choice and since use of such is conventional in the art and no cause for patentability here and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With respect to claim 12, the canister 11 of Wagner et al is a tubular shell.

With respect to claim 14, refer to the plates 66 and 77 in Wagner et al.

With respect to claim 16, refer to the catalytic converter element 50 (Fig. 3) of Wagner et al.

With respect to claim 19, Wagner et al disclose that the catalytic converter element 50 is made of ceramic material (col. 9, lines 5-15).

With respect to claim 20, the same comments regarding more than one catalytic converter elements with respect to Harris apply.

16. Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of JP 64-12017 and Harris (5,016,438) as applied to claims 11-12, 14, 16, 19-20 above, and further in view of Munro (4,541,240).

The same comments with respect to Munro apply.

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17. Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of JP 64-12017 and Harris (5,016,438) as applied to claims 11-12, 14, 16, 19-20 above, and further in view of Plemons, Jr. (5,183,976).

The same comments with respect to Plemons, Jr. apply.

18. Claims 17-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wagner et al (5,355,973) in view of JP 64-12017 and Harris (5,016,438) as applied to claims 11-12, 14, 16, 19-20 above and further in view of either Berg et al (4,364,761) or Lachman et al (3,885,977).

The same comments with respect to Berg et al and Lachman et al apply.

(11) Response to Argument

In several locations in the brief, Appellant urges that:

1) Appellant argues that Wagner teaches a muffler with a catalytic converter arrangement which is structurally and functionally distinguishable from the sound attenuation element of the instant claims. Specifically, resonators are not mufflers, in that they do not serve to attenuate or cancel a broad range of exhaust frequencies, but rather reduce or eliminate certain objectionable sound frequencies which are more difficult to attenuate using a conventional muffler. Wagner discloses the use of resonating chambers to facilitate the sound control and the use of a sonic choke arrangement in association with the resonating chambers for achieve sound attenuation. The use of the resonating chambers form dead spaces which do not allow the exhaust gases to exit the device until the engine has been shut down.

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2) Appellant argues that the device of Wagner is directed to a catalytic and muffler for use in diesel internal combustion engine and the reference of Wagner et al is silent as to how to use the device with gasoline internal combustion engine while the instant invention is directed to a catalytic converter and sound attenuating resonator combination that is used in the exhaust system of an internal combustion engine with or without a muffler.

3) Appellant argues that Plemons, Jr. is concerned with a free flowing device for sound attenuation which doesn't contribute to increase back pressure which is different from that of Wagner.

4) Appellant argues that Wagner discloses that the truck engines have very limited space for placement of catalytic converter and therefore one skilled in the art would not be persuaded to modify the reference muffler with a plurality of catalytic converters.

5) The combination of the references is based on hindsight.

6) Appellant urges that the rejection under 35 USC 112, first paragraph and second paragraph should be withdrawn since the instant specification clearly supports the newly added limitation in the amendment filed 2/15/00.

Such contentions are not persuasive for the following reasons:

1) Appellant's argument #1 that Wagner teaches a muffler with a catalytic converter arrangement which is structurally and functionally distinguishable from the sound attenuation element of the instant claims is unfounded. As pointed out clearly in the above rejections, Wagner discloses a device that includes all of the structural elements recited in the instant claims.

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Whether the device of Wagner can attenuate a certain specific frequencies or not is irrelevant since the instant claims do not require any specific frequencies at all. With respect to the arguments that the device of Wagner et al forms dead spaces which do not allow the gases exit the device until the engine has been shut down while the instant invention does not set dead spaces within the casing, it should be noted that the language of the instant claims does not commensurate in scope with such argument nor preclude provision of any dead spaces.

2) With respect to Appellant's argument #2, Appellant's arguments are directed to an intended use. However, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In this case, the device of Wagner discloses all of the structural elements recited in the instant claims.

3) Appellant's argument #3 that Plemons, Jr. is concerned with a free flowing device for sound attenuation which doesn't contribute to increase back pressure while Wagner's device is designed to restrict the flow of exhaust gas to reduce the noise level and provide appropriate back pressure is not persuasive. Note that Wagner, in col. 1, lines 35-40, recognizes that the addition of a catalytic converter in the muffler would lead to less sound attenuation and higher back pressure. Plemons, Jr. discloses provision of a forward plate 22 with a solid periphery

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devoid of passages and a rearward plate 24 with a plurality of passages 34 so as to contribute to sound attenuation as well as to control the back pressure. It would have been obvious to one having ordinary skill in the art to construct the forward and rearward plates as taught by Plemons, Jr. in the apparatus of Wagner et al so as to allow the exhaust gas exiting the resonator plenum, thereby to control the back pressure of the device.

4) Appellant's argument #4 that Wagner discloses that the truck engines have very limited space for placement of catalytic converter and therefore one skilled in the art would not be persuaded to modify the reference muffler with a plurality of catalytic converters is not persuasive. Note that Wagner discloses all of the structural elements recited in the instant claims, but is silent as to whether more than one catalytic converter element may be provided. Ignoffo and Harris show the conventionality of providing more than one catalytic converter elements in the muffler arrangement. It would have been obvious to one having ordinary skill in the art to provide more than one catalytic converter element in the apparatus of Wagner et al as taught by Ignoffo and Harris for further purifying exhaust gas. Note that one having ordinary skill in the art would be able to provide appropriate change when combining the teachings of the two references. It should be noted that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

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5) In response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

6) With respect to Appellant's argument regarding the 112, first and second paragraph rejections. Upon reconsideration, the rejection under 35 USC 112, first paragraph, has been withdrawn. Regarding claims 1, 11, 21, the rejection under 35 USC 112, second paragraph, has been withdrawn.

The rejections of claims 7 and 11 are still maintained. Note that the amendment after final was denied entry for the reasons set forth in the Advisory Action of July 26, 2000.

(12) Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

HT
January 16, 2001

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